

**ROYAL CIVIL SERVICE COMMISSION**  
**CIVIL SERVICE COMMON EXAMINATION (CSCE) 2009**  
**EXAMINATION CATEGORY: TECHNICAL**  
**PART III: SUBJECT SPECIALIZATION PAPER for BVSC & AH**

Date : 14/11/2009  
Total Marks : 100  
Examination Time : 2.5 Hrs  
Reading Time : 5 Minutes (prior to examination time)

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**INSTRUCTIONS TO THE EXAMINEE**

Please read the following instructions carefully before writing the answers. There are 11 pages of question including the instruction to the examinee page. Make sure all the pages are there.

- i. The question paper is divided into ***Part A*** and ***Part B***.  
Each part carries 50 marks each.
- ii. ***Part A*** is further divided into **2 Sections**:
  - a) ***Multiple Choice (30 questions)***
  - b) ***Short questions (4 questions)***Each multiple choice question carries 1 mark each and short question carries 5 marks each. All questions in Part A are compulsory.
- iii. ***Part B*** consists of 2 case studies out of which you are required to attempt only one as per your choice. Each question carries equal marks.
- iv. All answers must be written on the answer sheet provided separately including the multiple choice answers.

## PART A

### Section a: Multiple Choice Questions

30 Marks

*(Circle the right answer)*

1. The 'ciliary body' can be found in the:

- A. Eye,
- B. Nose,
- C. Ear,
- D. Trachea

2. Vitamin C is ascorbic acid combined with what mineral:

- A. Calcium,
- B. Potassium,
- C. Manganese,
- D. Sodium

3. Glucosamine is produced by the body and is:

- A. A protein,
- B. A lipid,
- C. An Amino sugar,
- D. A lipoprotein

4. Selenium is an essential trace element that enhances the uptake of what vitamin?

- A. Vitamin A,
- B. Vitamin D,
- C. Vitamin E,
- D. Vitamin K

5. Trichuriasis is an infestation what parasite:

- A. Tapeworms,
- B. Hookworms,
- C. Roundworms,
- D. Whipworms

6. The toxic component of chocolate is?

- A. Theophylline
- B. Toxaphene
- C. Theobromine
- D. Thiocyanate

7. Acute renal (kidney) failure as a result of Ethylene Glycol toxicity usually occurs how long after ingestion in the cat?
- A. 12-24 hours after ingestion
  - B. 36-72 hours after ingestion
  - C. 5 days after ingestion
  - D. This rarely, if ever, happens in the cat
8. A horse is acutely sore in its gait but not lame, the skin at the back of the pastern is swollen, painful, smelly, and has recent horizontal fine fissures. Which one of the following treatments would be MOST likely to be effective?
- A. Systemic corticosteroids
  - B. Topically applied astringent mixture such as white lotion
  - C. Topical application of an antibacterial ointment such as 5% furacin
  - D. Topical application of a 2% xylocaine jelly
9. The resting heart rate of a clinically normal thoroughbred horse in race training is usually within the range of:
- A. 20 to 40 beats per minute
  - B. 40 to 60 beats per minute
  - C. 60 to 80 beats per minute
  - D. 80 to 100 beats per minute
10. Which one of the following abnormalities produces a systolic murmur?
- A. Mitral valve stenosis
  - B. Aortic valve insufficiency
  - C. Mitral valve insufficiency
  - D. Persistent right aortic arch
11. In large animal radiography where higher kVp exposures are required, it is preferable to:
- A. Wear protective lead aprons and gloves
  - B. Use additional filtration at the tube port
  - C. Use screen film
  - D. Adopt all of the above

12. The soda lime used to absorb CO<sub>2</sub> in anaesthesia:
- A. Requires water for reaction to occur
  - B. Absorbs heat during reaction
  - C. Is composed mainly of sodium hydroxide
  - D. Is hardened by the addition of potassium hydroxide
13. Carbohydrate is the sole source of energy in the:
- A. Brain
  - B. Myocardium
  - C. Skeletal muscle
  - D. Kidney
14. Of the following topical applications, the one MOST likely to be an effective treatment for chorioptic mange of cattle is:
- A. Lime-sulphur spray
  - B. An iodophors preparation containing 1% free iodine
  - C. Moxidectin pour-on 0.5mg/kg
  - D. An organic arsenical spray
15. Of the tests listed below, the MOST supportive of the diagnosis of bracken fern (*Pteridium aquilinum*) poisoning in cattle is:
- A. Reduced serum creatinine phosphokinase level
  - B. Reduced haematocrit (packed cell volume)
  - C. Elevated serum protein level
  - D. Reduced blood platelet count
16. Which one of the listed nutritional states has been associated causatively with the disease post-parturient haemoglobinuria in cattle?
- A. Phosphorus deficiency
  - B. Calcium deficiency
  - C. Vitamin C deficiency
  - D. Zinc deficiency
17. An adult goat is presented with fever, an obvious white opacity in one eye, weeping and blepharospasm and skew deviation of the same eye, paresis and lateral deviation of the head. Which one of the following diseases is the likely diagnosis?
- A. Listeriosis
  - B. Infectious kerato-conjunctivitis
  - C. Coliform meningo-encephalitis
  - D. Bovine malignant catarrh (malignant catarrhal fever)

18. Heat stroke, or simple hyperthermia, occurs during hot weather. Which one of the listed factors is LEAST LIKELY to be a contributing cause?
- A. Direct irradiation of the head by the sun
  - B. Over-crowding in confined spaces with inadequate ventilation
  - C. Fat animals with heavy coats
  - D. Physical exercise
19. Which one of the following signs occurs only in pregnant cows?
- A. Dry cervical mucosa
  - B. Fremitus in the middle uterine artery
  - C. An enlarged uterine horn with a corpus luteum in the ipsilateral ovary
  - D. Foetal membrane slip
20. Total sperm count is related to testicle size. Which of the following parameters gives the BEST guide to total sperm count?
- A. Scrotal circumference multiplied by length of testicles
  - B. The greatest scrotal circumference with the testes held side by side in the scrotum
  - C. The diameter of both testicles added together
  - D. The diameter of the scrotum
21. The laboratory test used to diagnose anthrax in a cow which has just died suddenly is:
- A. Stain of a blood smear taken from a peripheral blood vessel
  - B. Culture of faeces
  - C. A complement fixation test
  - D. Culture of material obtained from the spleen
22. Which one of the following strategies can be used MOST effectively in the final stages of a campaign to eradicate Swine Fever (hog cholera) from a pig population?
- A. Ceasing feeding garbage to pigs
  - B. Slaughter of infected herds
  - C. Vaccination with serum-virus vaccine
  - D. Vaccination with inactivated virus vaccine
23. Long distance spread of the infective agent down-wind, without the assistance of insect vectors, is characteristic of:
- A. Contagious bovine pleuropneumonia
  - B. Foot and mouth disease
  - C. African Horse Sickness
  - D. Mycotic dermatitis (*Dermatophilus congolensis*)

24. In a well managed, well fed dairy herd the proportion of cows showing oestrus by 60 days after calving will be approximately:
- A. 90%
  - B. 50%
  - C. 70%
  - D. 100%
25. It is generally regarded that the minimum time to allow a dairy calf to stay with its dam to ensure a passive transfer of antibodies in the colostrums is which one of the following:
- A. 2 hours
  - B. 12 hours
  - C. 2 weeks
  - D. 2 months
26. Human beings occasionally become infected with the liver fluke *Fasciola hepatica*. Infection can usually be traced to ingestion of:
- A. Undercooked ruminant liver
  - B. Snails
  - C. Watercress
  - D. Undercooked tripe
27. *Brucella abortus* can be transmitted from cattle to farmers in many ways. The MOST likely is:
- A. Percutaneous infection from unpasteurised milk
  - B. Percutaneous infection after handling aborted foetuses/uterine discharges etc
  - C. Inhalation of infective droplets
  - D. Conjunctival exposure
28. *Toxocara canis* eggs in fresh dogs' faeces are:
- A. Thin shelled, unembryonated
  - B. Thin shelled, embryonated
  - C. Thick shelled, unembryonated
  - D. Thick shelled, embryonated
29. The characteristic muscle lesion of blackleg (*Clostridium chauvoei*) is:
- A. Hemorrhagic myositis
  - B. Degenerative myopathy
  - C. Muscular hypertrophy
  - D. Intestinal oedema with no muscle lesion

30. The MOST important method of spread of *Brucella abortus* among cattle is:

- A. Ingestion
- B. Passive venereal transfer or passive sodomy
- C. Placental
- D. Respiratory

## PART A

### Section b: Short Questions (5 marks each)

20 Marks

1. You are recently posted at the National Animal Hospital, Chubachu, Thimphu as part of your probation. The senior veterinarians are either on leave or are out of station busy attending emergency veterinary outcalls. You are attending to all the cases by yourself for the day. A sick three year old German Shepherd dog is brought to the veterinary hospital by its owner. The owner reports that the dog is lethargic, weak in one or more limbs, and unable to raise its head or make sounds. There is heavy frothing from the mouth. The owner also mentions that the dog was once bitten by another dog a few weeks ago. However, the owner is not very sure regarding the exact date of biting incidence or the breed or type of the dog that has bitten his pet dog. Now based on the case history, how would you arrive the diagnosis of the disease.

  - A. What is the disease in question?
  - B. What causes the disease?
  - C. How long is the incubation period?
  - D. How is the disease transmitted?
  - E. What are the symptoms in dogs and humans?
  - F. Why is post bite vaccination given?
  - G. What can be done to prevent exposure to that deadly zoonotic disease?
2. The case history of a four year old Spiti mare named “Wangdi” says that every spring she develops some kind of a problem while walking. For several weeks in April and May she lies down most of the time and seems very sore when she walks. Usually by late June or July she gets better and is fine for the rest of the year.

  - A. Name the condition the mare is suffering from?
  - B. What are its causes?
  - C. Describe briefly its pathogenesis?
  - D. How will you treat this condition?
  - E. How can you prevent the mare from getting this condition again this spring?
3. A distressed farmer reports that his dairy cow has given still birth a few days ago. The dairy cow is in its third calving period. However, the fetal membranes are still hanging from the birth canal and by now it has really started smelling very bad.

  - A. What is the name of the above condition?
  - B. Briefly describe are the possible causes?
  - C. How would you treat this condition?
  - D. What preventive measures would you recommend?
  - D. How does this impact on the productivity of the cow?

4. Livestock and its production systems play a significant role in global warming and climate change. For your information, livestock account for an estimated 9% of global carbon dioxide emissions, 35-40% of global methane emissions and 65% of global nitrous oxide emissions. Therefore, the implication of livestock and its various production systems on the environment is indeed huge. On the other hand, climate change will also impact on livestock rearing.

Now you as a responsible livestock professional, you are required to deliver both quality livestock and its products for general consumers while at the same time be mindful of protecting the overall environment at large. In future, the need and demand to strike a delicate balance between pursuing livestock development and protection of environment is only going to gain currency and momentum.

- A. What is climate change? Mention some of the causes of global warming.
- B. Discuss briefly how climate change will affect livestock?
- C. What are some of the mitigation measures to reduce or minimize Green House Gases (GHGs) emission from livestock rearing?
- D. What do you understand by “sustainable development”?

## PART B

### Long Questions

50 Marks

Choose one of the following questions of your choice.

Q.1. The management of the National Jersey Cattle Breeding Farm, Samtse is requesting for an emergency veterinarian's service. A jersey cow in its first calving has already past its normal gestation period. The cow is obviously in great pain and difficulty. The report says that the labor pain has started 10 hours ago but parturition has not occurred as yet. The Animal Health Auxiliary (AHA) attached with the farm has tried every non surgical method known to him but to no avail.

Now both the cow and the unborn calf are at great risk of imminent death if appropriate emergency measures are not taken up immediately. It is a race against time. Now you as a fresh veterinarian, who has recently completed your University and with a high level of enthusiasm and commitment to put what you have learned into concrete actions, how you would approach the case in question:

- A. Identify the condition mentioned in the above case? What is the name of the condition?
- B. Briefly describe important causes of the above condition?
- C. What are the non-surgical measures the animal health auxiliary might have attempted prior to seeking a veterinarian's help? Briefly describe the various non-surgical methods for treating such a case in question.
- D. What surgical intervention would you recommend?
- E. What are different surgical methods available for this case? Which one would you prioritize for conducting the operation? Briefly describe the advantages and disadvantages of this particular surgical method that you have chosen.
- F. Describe in detail the surgical procedure in question including giving anesthesia, preparation of site, the actual operation procedure, post operative care and any other recommendation?

Q.2. The dairy development initiatives undertaken by the Department of Livestock, Ministry of Agriculture, Royal Government of Bhutan have yielded very little impact both in terms of increasing milk production and farmer's income in the country. Bhutan continues to be a net importer of milk and milk products. After years of investment of scarce government resources, both human and financial, in the dairy development sector, it has not really taken off well as desired by the higher authorities and farmers alike. This is despite dairy development sector enjoying topmost priority of the Ministry of Agriculture. And farmers also do not have problem in taking up dairy activities since it is well accepted in the society as it is not associated with either public criticism or social stigma. Though the overall policy environment for promoting an inclusive dairy development in the country is very positive, there are many limiting factors. Some of which, in the Bhutanese context, are:

1. Livestock production system is still subsistence oriented to a large extent/ Low input/output system;
2. Farmers' resistance and lack of understanding have contributed to the slow progress;
3. Long-term credit is difficult for smallholder farmers to acquire;
4. Poor management of dairy animals by farmers;
5. Large unproductive and low yielding cattle population;
6. Unavailability of adequate feed and fodder resources;
7. Frequent outbreak of livestock diseases;
8. Lack of appropriate milk processing, packaging, distribution and marketing facilities;
9. Scattered human settlement/skewed milk production areas;
10. Poor livestock extension delivery system;
11. Shortage of trained manpower and experience;
12. Lack of clear dairy development concept and strategy.

Now that you are recently appointed as the Chief Dairy Development Officer, Dairy Development Division in the Department, the Director General has instructed you to come up with a practical National Dairy Development Master Plan which must be able to cater and meet the requirements for the next 10 to 15 years. Now taking into account the main limiting factors mentioned above:

- A. How would you go about developing the National Dairy Development Master Plan? Describe briefly how you would address each of the issues highlighted here.
- B. Prepare a clear implementation plan for the first 5 years along with activities and hypothetical/indicative budget for these activities.
- C. According to you, which is more important the planning process or the plan itself or both. Justify your answer.